

**TOTAL**

Total Petroleum, Inc.

EAST SUPERIOR STREET  
ALMA, MICHIGAN

TELEPHONE 517 463-1161



MAILING ADDRESS:  
ALMA, MICHIGAN 48802

BENJAMIN E. WHITE, P. E.  
ENVIRONMENTAL ENGINEER

RECEIVED  
NOV 13 1987  
DNR-REG

November 5, 1987

Mr. Frank Baldwin  
Surface Water Quality Division  
Michigan Department of Natural Resources  
Stevens T. Mason Building  
P.O. Box 30028  
Lansing, Michigan 48909

Dear Mr. Baldwin:

Subject: USEPA DMR-QA Study Number 007

This is to explain to you the reasons for the errors that were found in our 1987 National Discharge Monitoring Report (DMR) Quality Assurance (QA) report. There were several discrepancies between the values that we reported and the acceptable or warning limits listed in the performance evaluation report:

CHROMIUM

Our report shows that we measured a value of 48,000  $\mu$ g/L and the warning limits were between 425 and 581  $\mu$ g/L.

The concentration that we actually measured was 480  $\mu$ g/L. The number 480 was written in the left hand boxes of the report. We now understand that the three right hand boxes should have been used. 480  $\mu$ g/L is within both the acceptable and warning limits.

pH

We reported a value of 5.3 whereas the acceptable limits were between 5.06 and 5.30. The performance evaluation indicated that we should check for errors.

Our analysts typically report pH values to the nearest 1/10 of a pH unit. We do not know what value would have been reported if an attempt had been made to measure to the nearest 1/100. However, a value of 5.3 is within the acceptable limits.

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SWQD-COMPLIANCE

November 6, 1987

AMMONIA-NITROGEN

Our reported value was 18.10 mg/L whereas the true value was 12.5 mg/L.

Unfortunately, an error was made when the reported numbers were transposed from the laboratory notebook. The value for the millimeters of titrate used was incorrectly reported rather than calculated ammonia-nitrogen concentration. The correct ammonia-nitrogen concentration that was measured was 12.2 mg/L. This measured 12.2 mg/L concentration is within both the warning and acceptable limits.

COD

Our reported value was 77.50 mg/L and the true value was 54.4 mg/L.

We cannot explain this discrepancy and additional samples for COD evaluation have been requested.

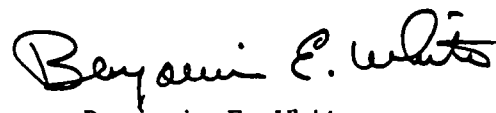
5-DAY BOD

A value of 48.00 mg/L was reported and the true value was 35.00.

Upon review of our calculations we found that one of the three BOD<sub>5</sub> values that were generated should not have been used for averaging. The Dissolved Oxygen depletion in that sample was less than 2 mg/L and, therefore, a BOD<sub>5</sub> concentration should not have been calculated for that sample. When the two remaining BOD<sub>5</sub> values were averaged we learned that a correctly calculated BOD<sub>5</sub> of 44 mg/L should have been reported. This value is within the warning limits of 24.6 to 45.3 mg/L. Our laboratory personnel typically follow the correct procedure by not using DO concentrations from samples that have not depleted at least 2 mg/L. We have reminded our analysts of the need to follow this procedure.

We hope that this letter adequately explains the discrepancies that were shown on the report. If you have any questions concerning this information please contact Mr. Bernard Shaver or myself at (517) 463-1161.

Sincerely,

  
Benjamin E. White

BEW/lf

PERFORMANCE EVALUATION REPORT

DATE: 07/20/87

DMR-2A STUDY NUMBER 007

PERMITTEE: MI0001066

TOTAL PETROLEUM ALMA REFINERY

IX

ANALYTES	V P	REPORT VALUE	TRUE VALUE*	ACCEPTANCE LIMITS	WARNING LIMITS	PERFORMANCE EVALUATION
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TRACE METALS IN MICROGRAMS PER LITER:

CHROMIUM		48000	514	400.- 606.	425.- 581.	NOT ACCEPTABL
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MISCELLANEOUS ANALYTES:

PH-UNITS	5.30C	5.20	5.06- 5.30	5.09- 5.27	CHECK FOR ERR
TOTAL SUSPENDED SOLIDS (IN MG/L)	80.50	80.9	62.1- 87.0	65.2- 84.0	ACCEPTABL
OIL AND GREASE (IN MG/L)	7.100	8.00	1.34- 12.8	2.77- 11.4	ACCEPTABL

NUTRIENTS IN MILLIGRAMS PER LITER:

AMMONIA-NITROGEN	18.10	12.5	9.93- 14.8	10.5- 14.2	NOT ACCEPTABL
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DEMANDS IN MILLIGRAMS PER LITER:

COD	77.50	54.4	37.4- 64.4	40.8- 61.1	NOT ACCEPTABL
5-DAY BOD	48.00	35.0	21.2- 48.7	24.6- 45.3	CHECK FOR ERR

ADDITIONAL MISCELLANEOUS ANALYTES:

TOTAL PHENOLICS (IN MG/L)	0.350	.368	.128- .607	.109- .546	ACCEPTABL
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\* BASED UPON THEORETICAL CALCULATIONS, OR A REFERENCE VALUE WHEN NECESSARY.

# PERFORMANCE EVALUATION REPORT

DATE: 07/20/87

DMR-2A STUDY NUMBER 007

PERMITTEE: MI0001066

TOTAL PETROLEUM ALMA REFINERY

IX

ANALYTES	V P	REPORT VALUE	TRUE VALUE*	ACCEPTANCE LIMITS	WARNING LIMITS	PERFORMANCE EVALUATION
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## TRACE METALS IN MICROGRAMS PER LITER:

CHROMIUM	48000	514	400.- 606.	425.- 581.	NOT ACCEPTABLE
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## MISCELLANEOUS ANALYTES:

PH-UNITS	5.300	5.20	5.06- 5.30	5.09- 5.27	CHECK FOR ERROR
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TOTAL SUSPENDED SOLIDS (IN MG/L)	80.50	80.9	62.1- 87.0	65.2- 84.0	ACCEPTABLE
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OIL AND GREASE (IN MG/L)	7.100	8.00	1.34- 12.8	2.77- 11.4	ACCEPTABLE
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## NUTRIENTS IN MILLIGRAMS PER LITER:

AMMONIA-NITROGEN	18.10	12.5	9.93- 14.8	10.5- 14.2	NOT ACCEPTABLE
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## DEMANDS IN MILLIGRAMS PER LITER:

COD	77.50	54.4	37.4- 64.4	40.8- 61.1	NOT ACCEPTABLE
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5-DAY BOD	48.00	35.0	21.2- 48.7	24.6- 45.3	CHECK FOR ERROR
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## ADDITIONAL MISCELLANEOUS ANALYTES:

TOTAL PHENOLICS (IN MG/L)	0.350	.368	.128- .607	.189- .546	ACCEPTABLE
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\* BASED UPON THEORETICAL CALCULATIONS, OR A REFERENCE VALUE WHEN NECESSARY.